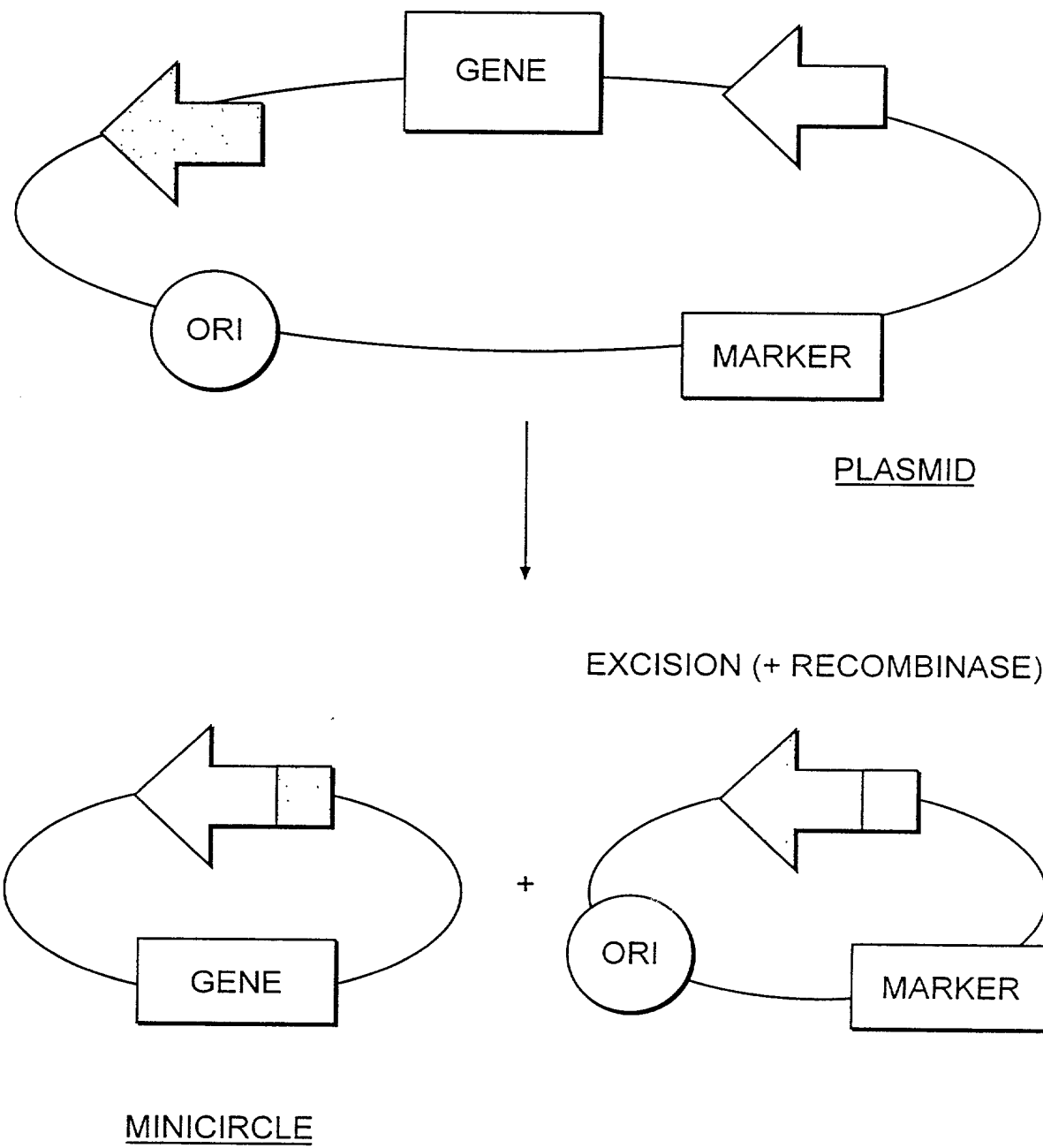
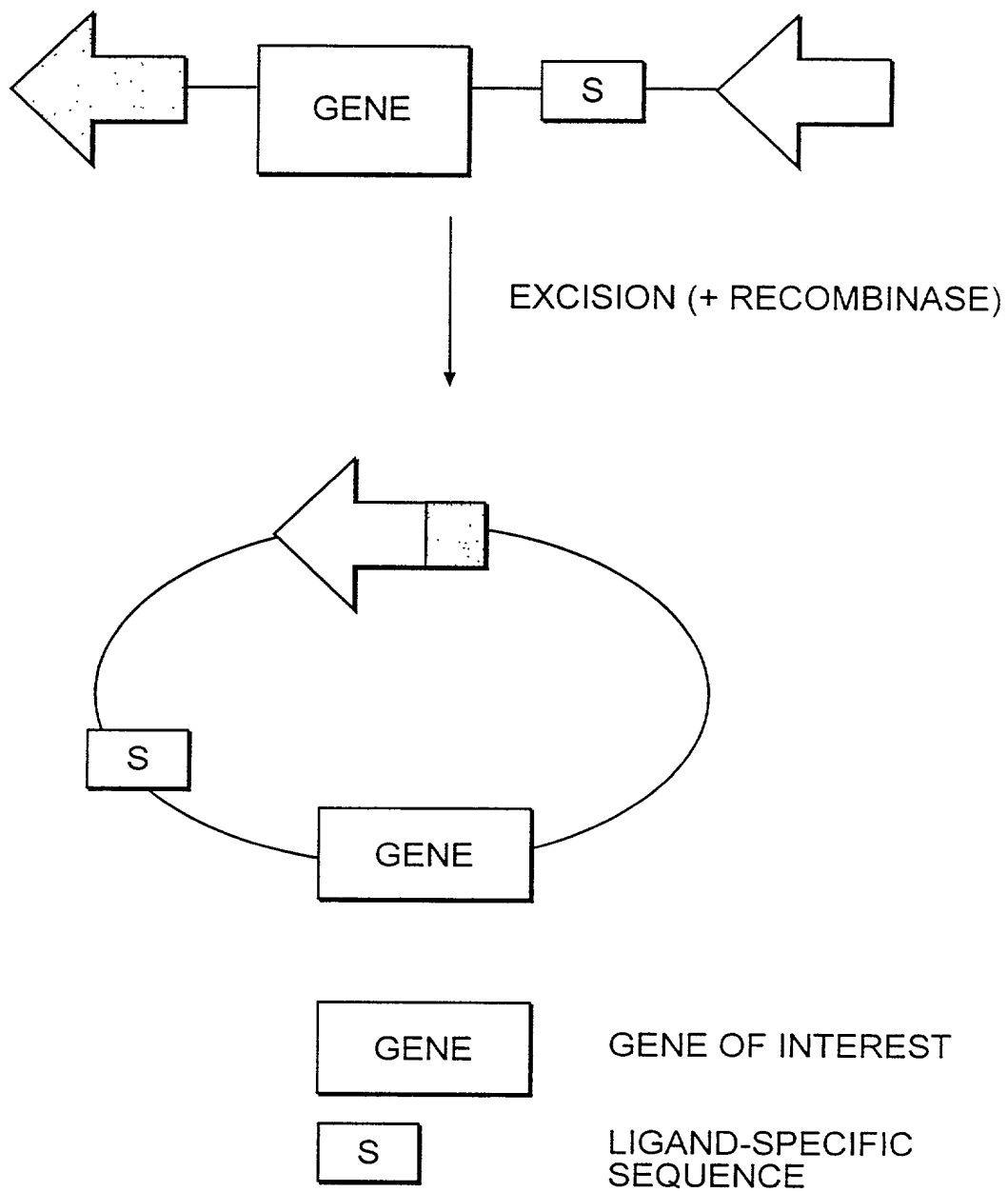


**FIG. 1**



**FIG. 2**



**FIG. 3**

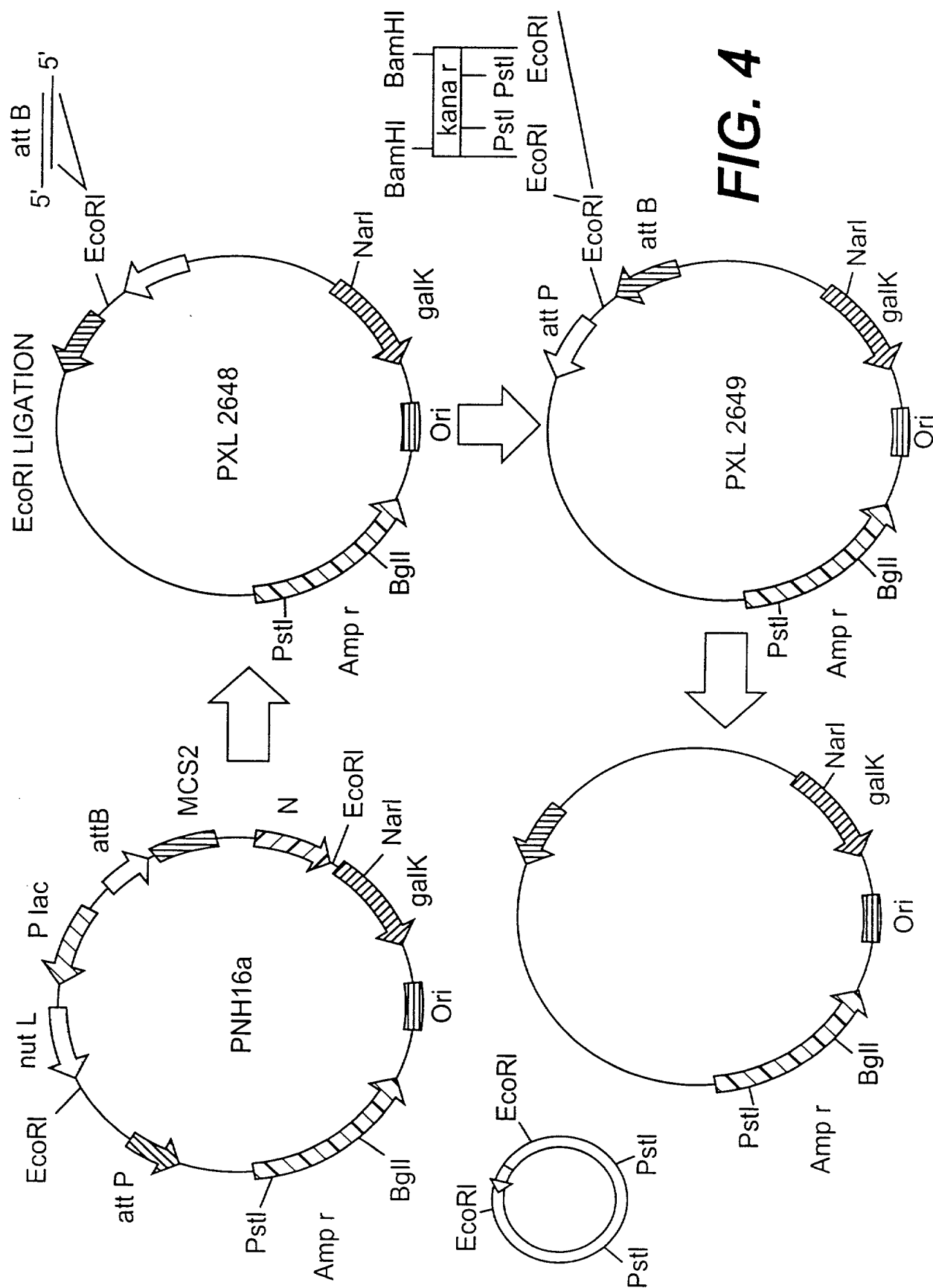
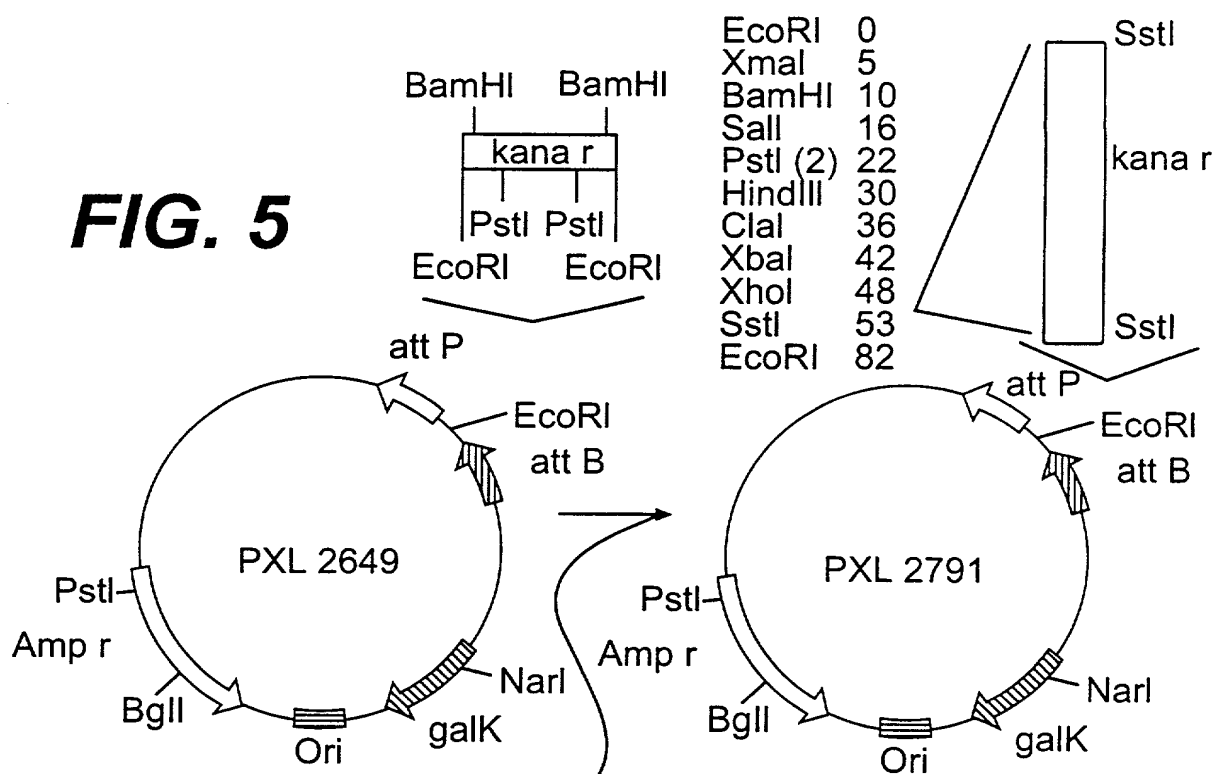


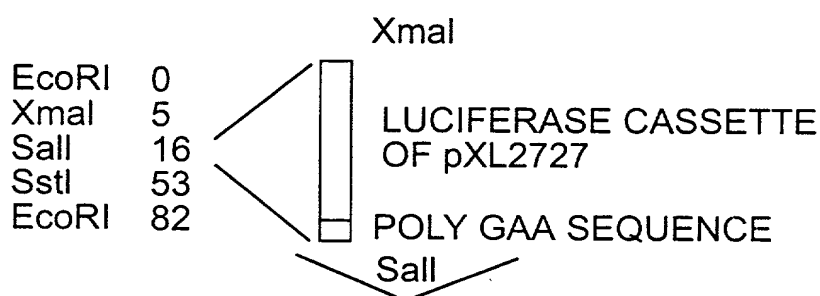
FIG. 4

**FIG. 5**

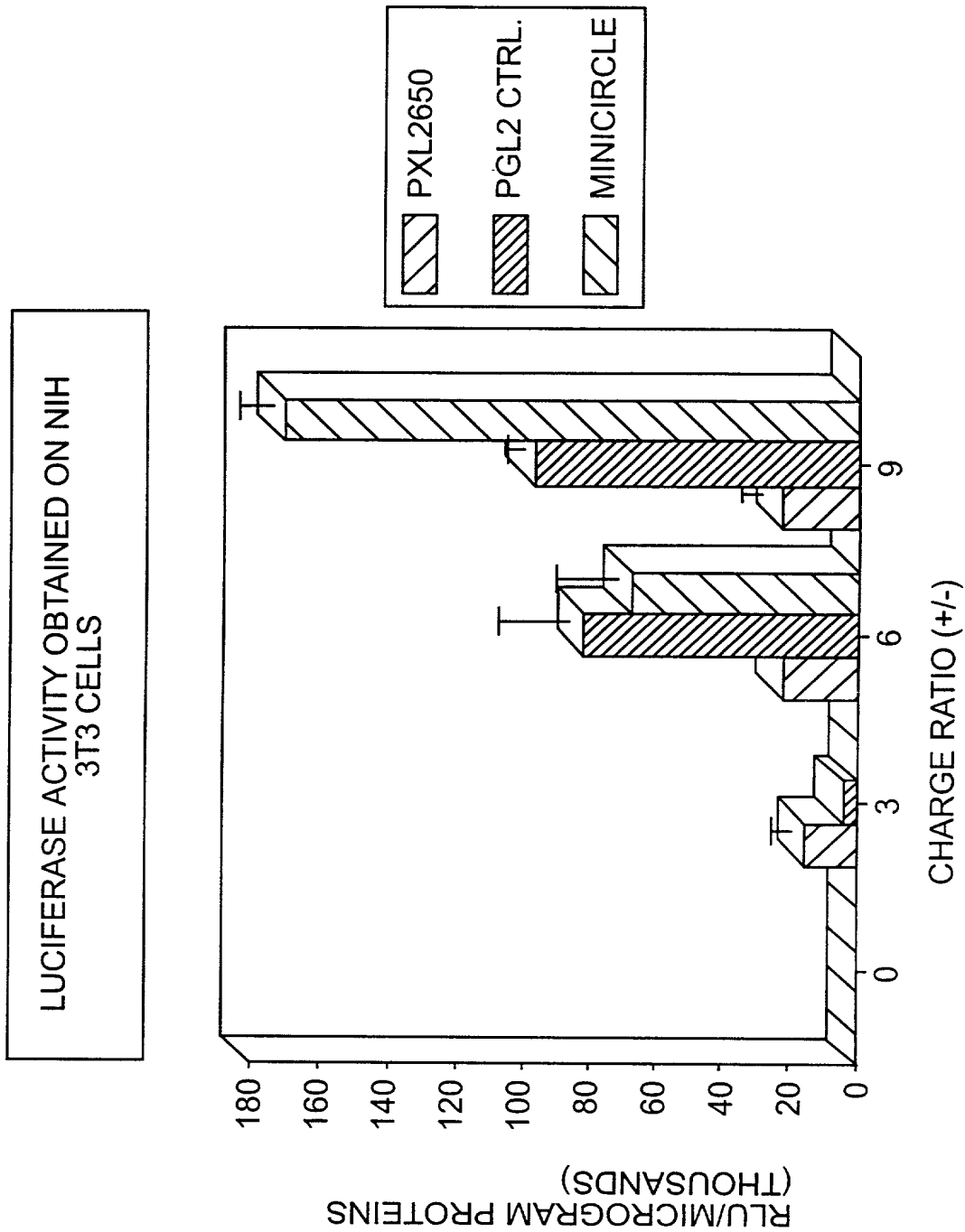


1- EcoRI DIGESTION OF pXL2649  
2-CLONING OF THE EcoRI FRAGMENT OF PLASMID pXL1571 SET

DIGESTION OF PLASMID pXL2791 WITH SstI



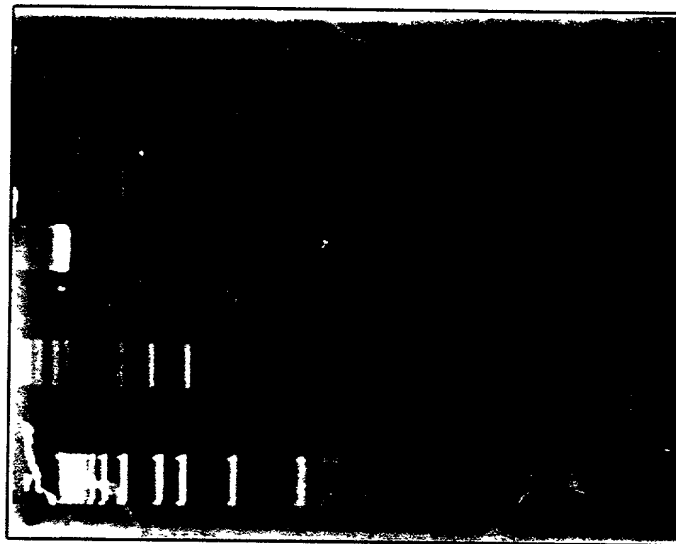
1-DIGESTION OF pXL2792 WITH Sall AND XmaI  
2- CLONING OF THE Sall-XmaI FRAGMENT OF PLASMID pXL2727



**FIG. 6**

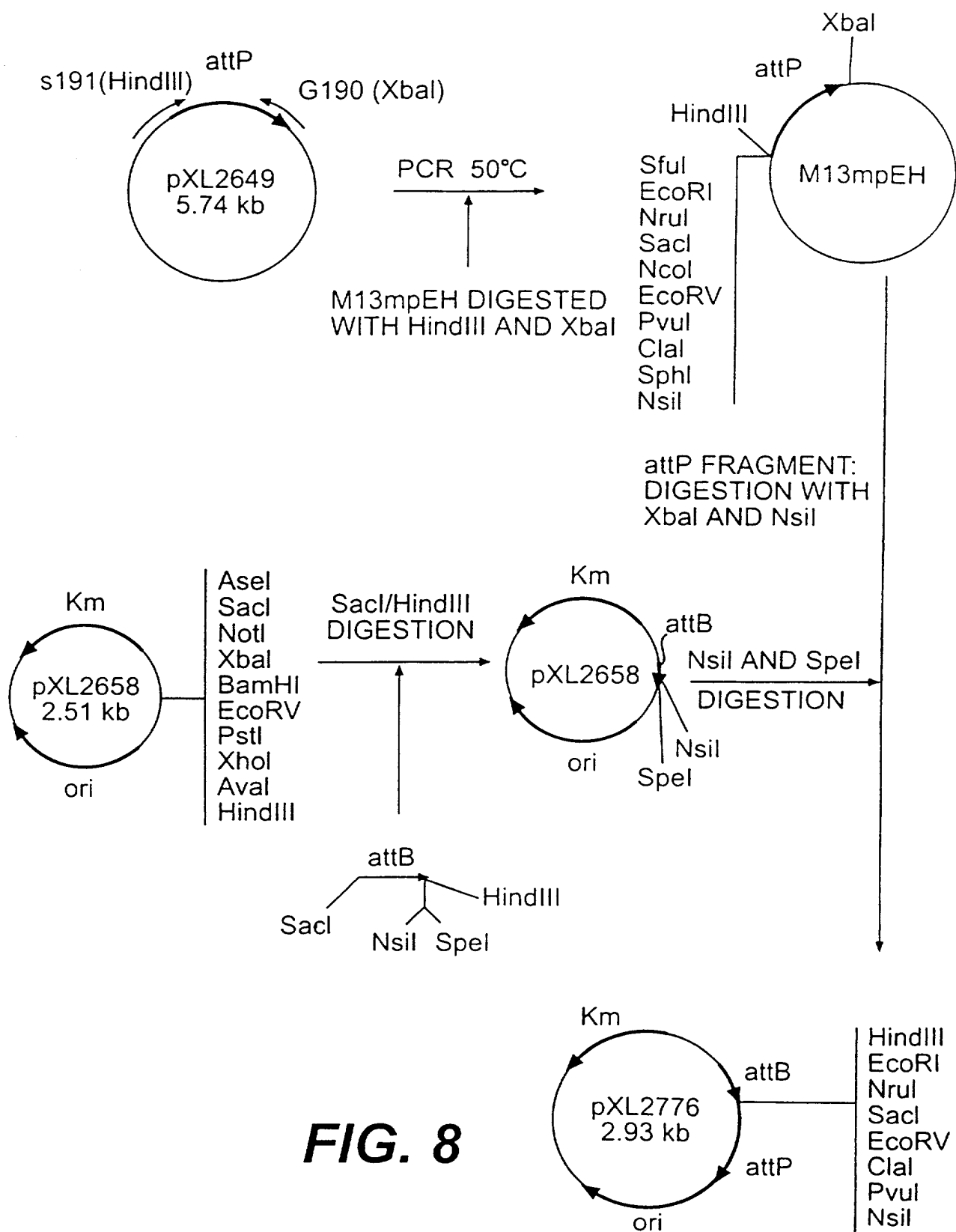
2025 RELEASE UNDER E.O. 14176

- 1 →
- 2 →
- 3 →
- 4 →
- 5 →
- 6 →

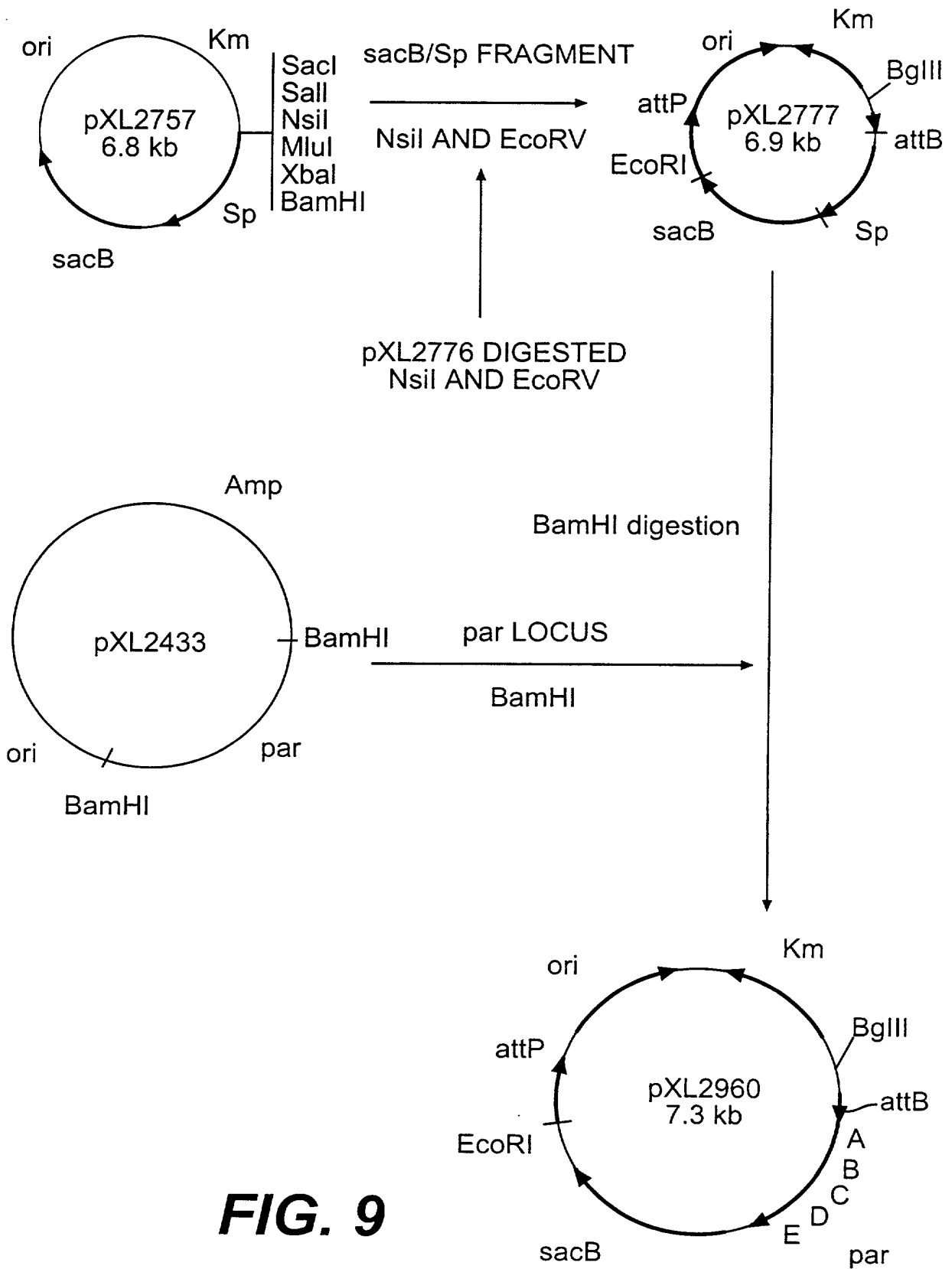


***FIG. 7***

**FIG. 8**

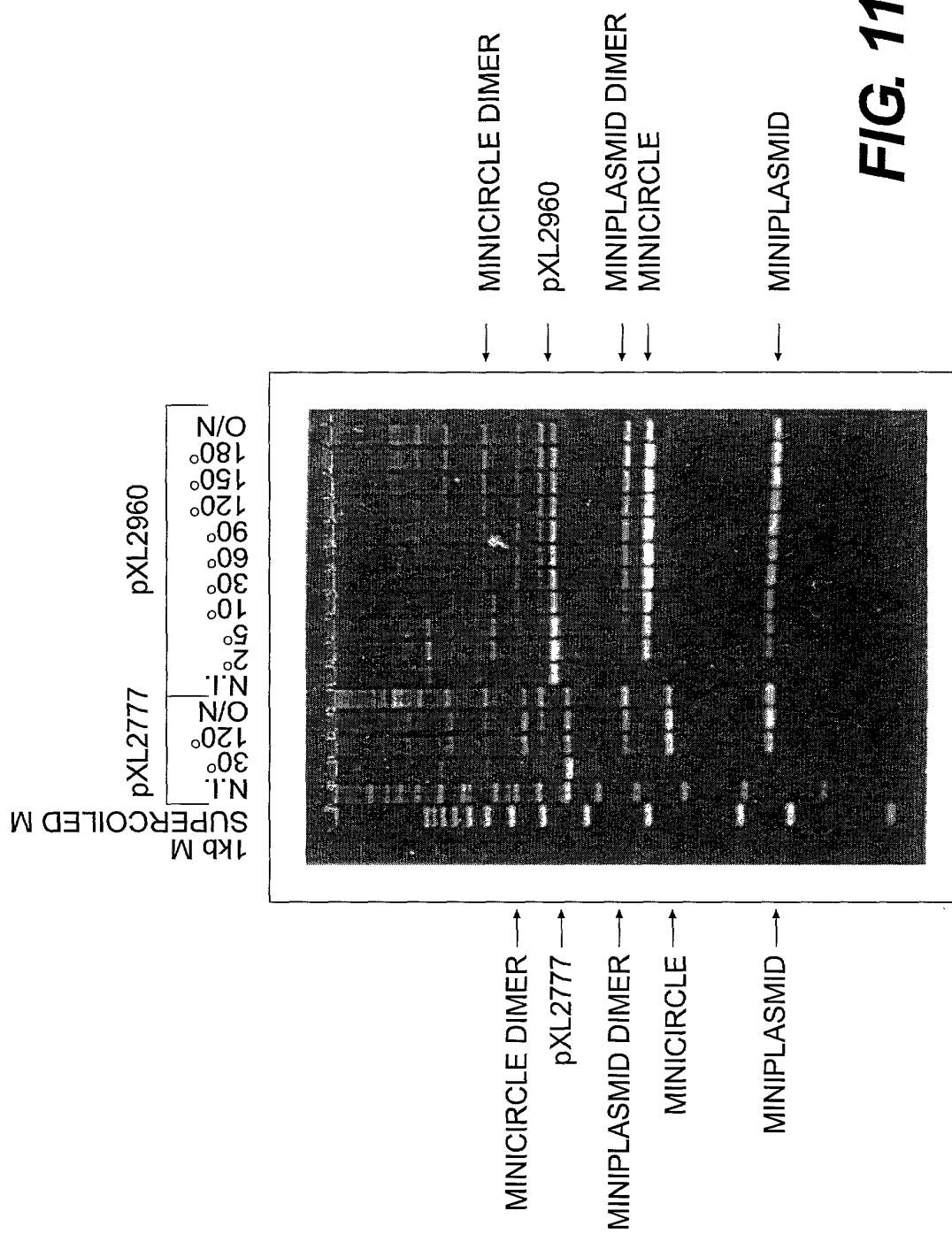


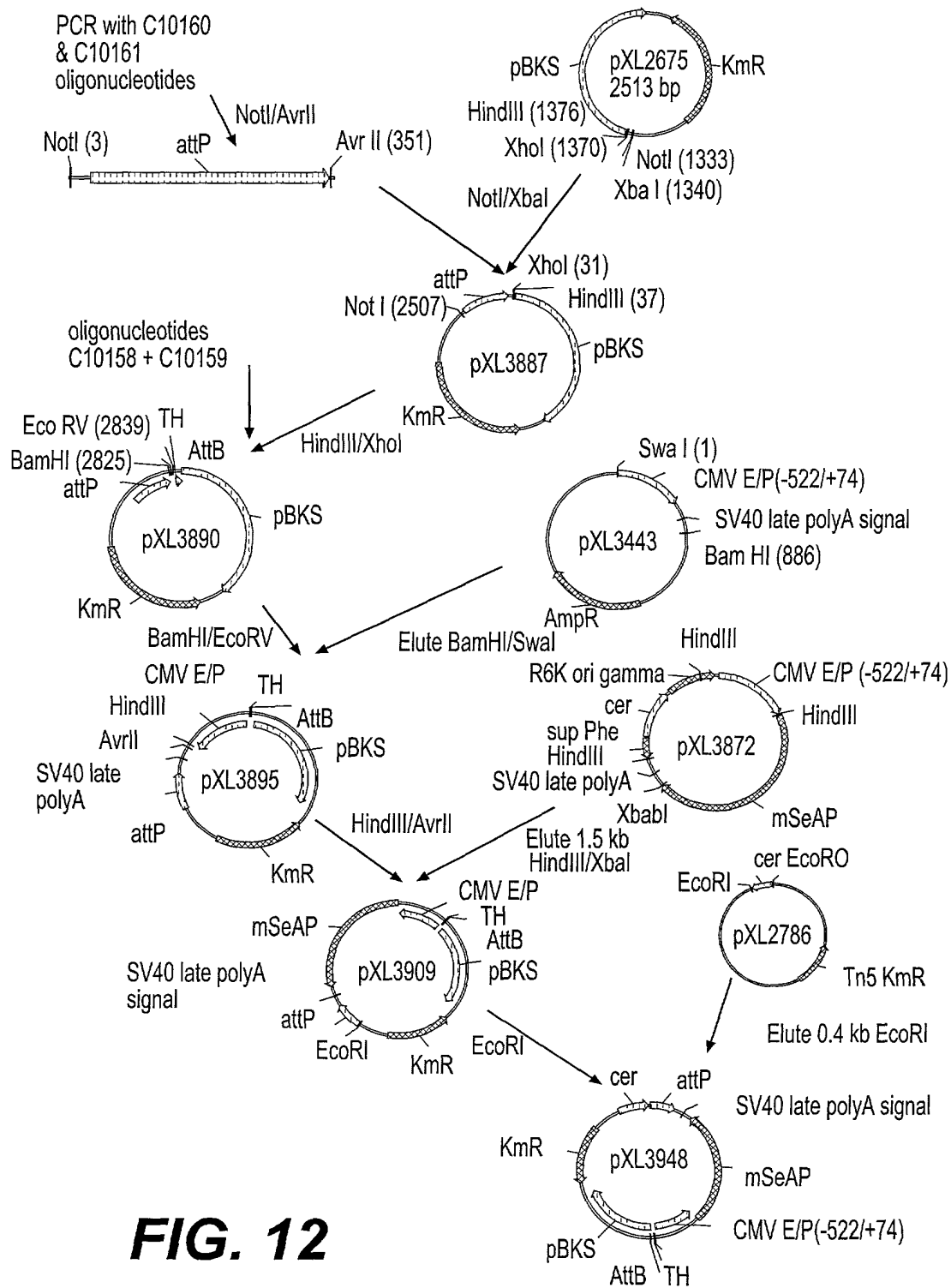




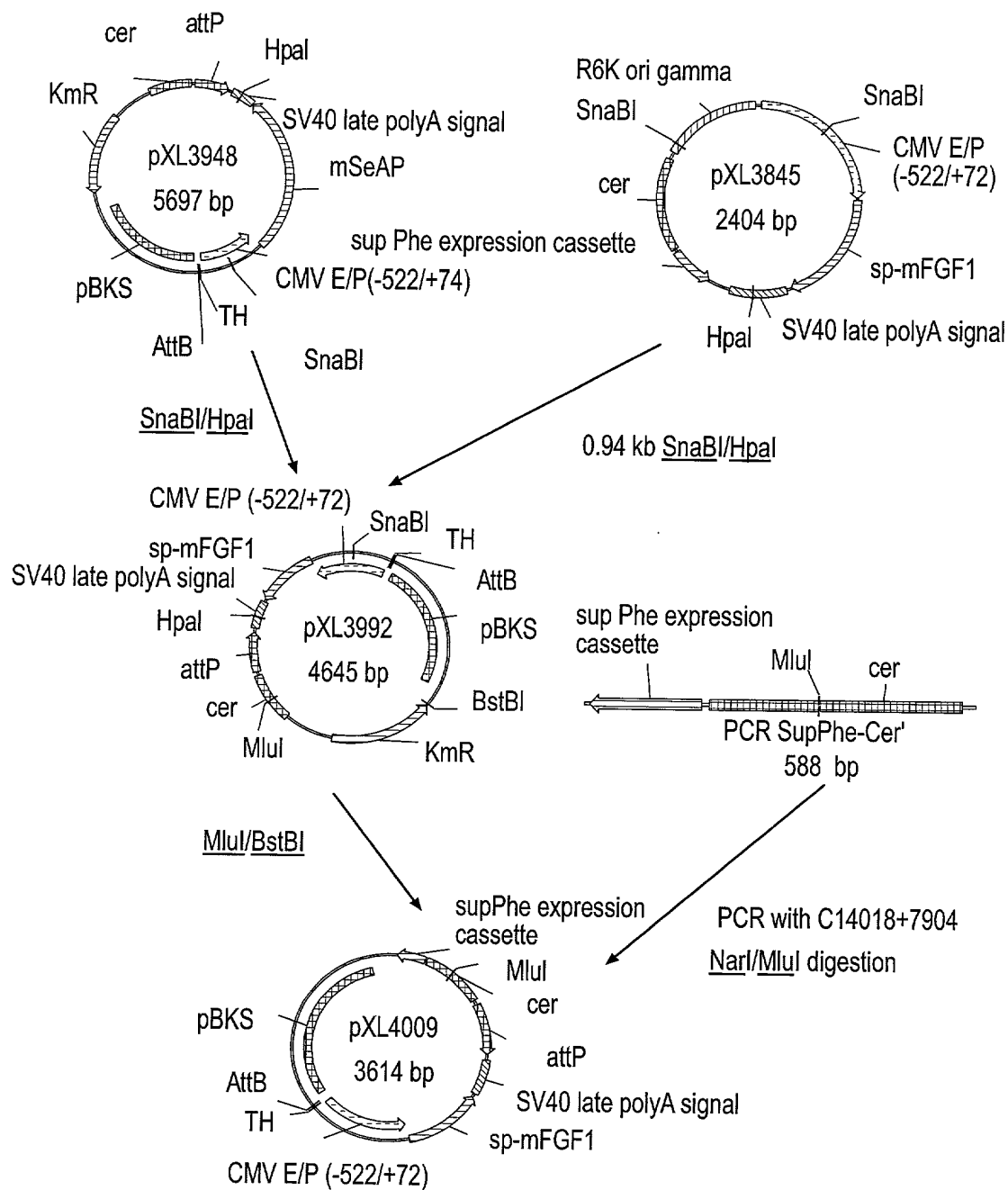
**FIG. 9**







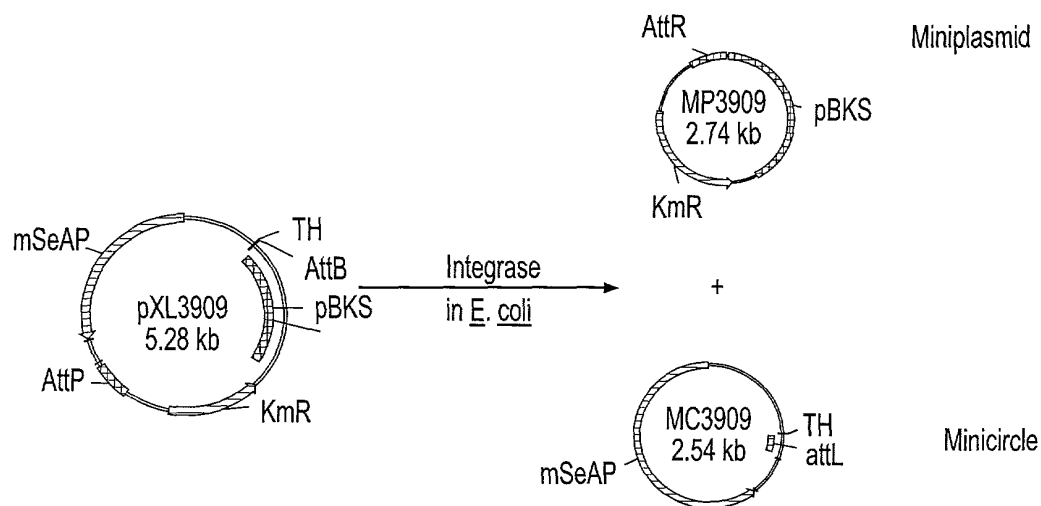
**FIG. 12**



C14018: 5'-AAAGGCGCCAGCTTAAAAAATCC-3' (SEQ ID NO: 49)  
 7904: 5'-CATACGTCAATTATTGACGTC-3' (SEQ ID NO: 50)

**FIG. 13**

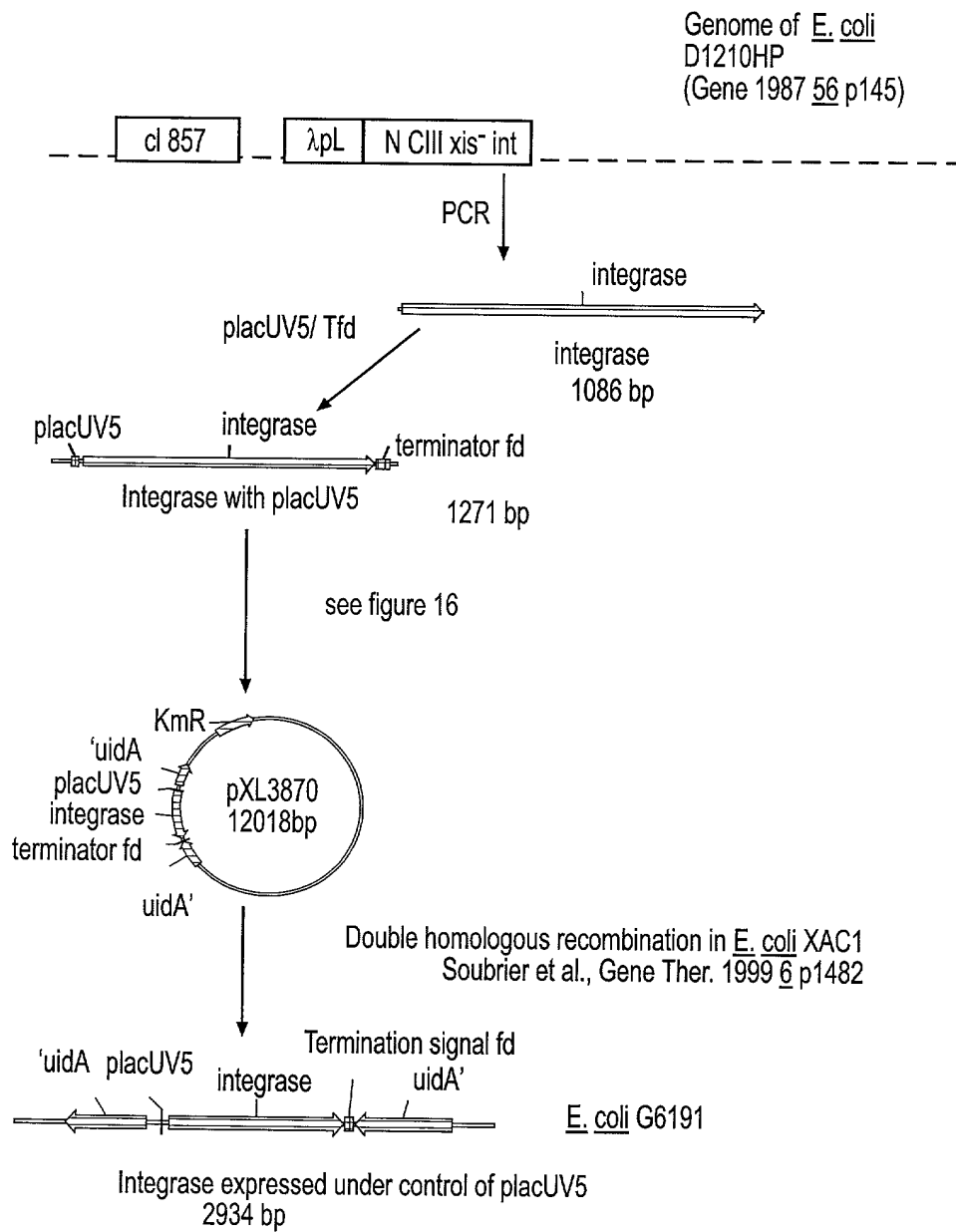
**FIG. 14**



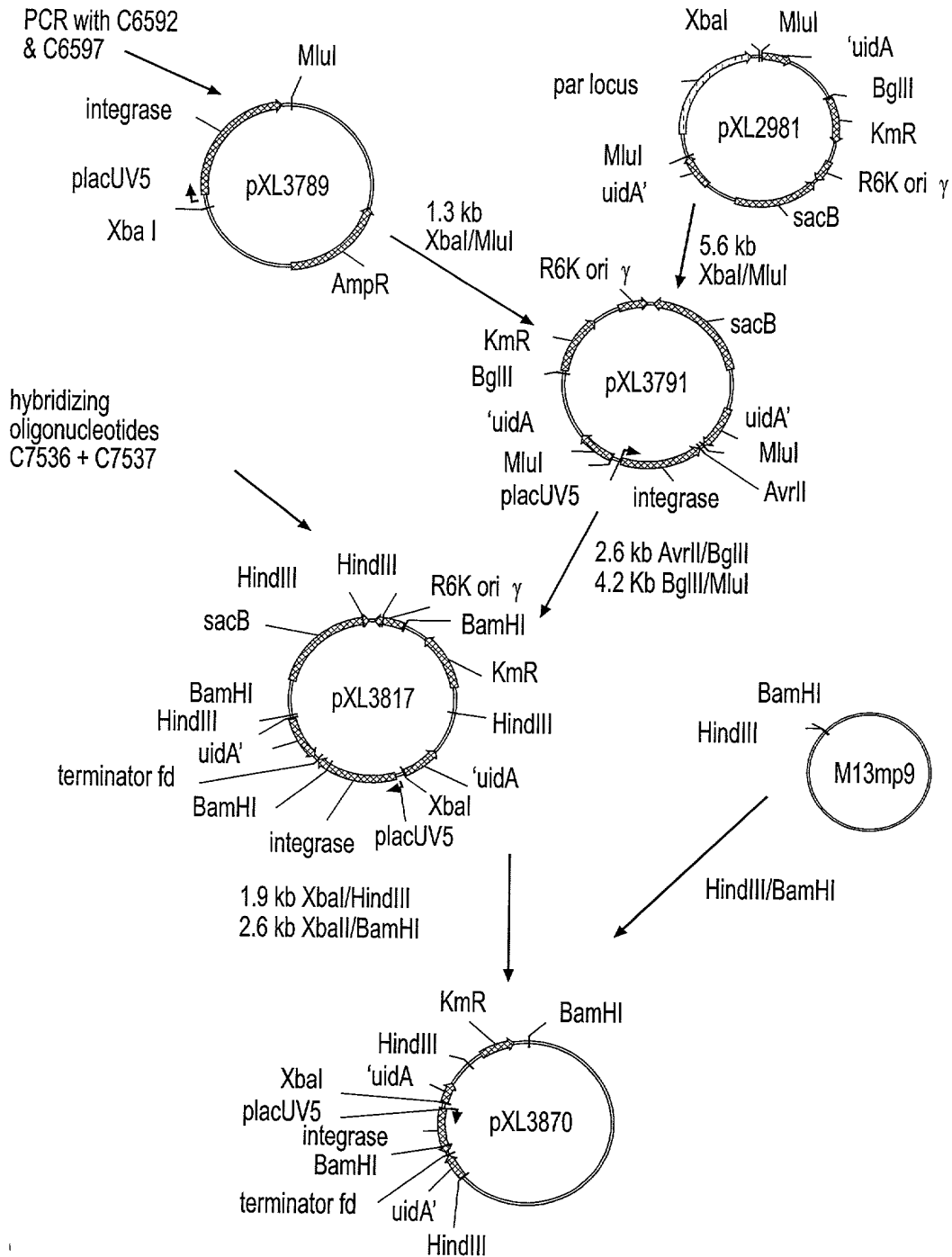
TRIPLE HELIX SEQUENCE & attL (119 bp) (SEQ ID NO: 12)

5' -TTCTTTTTTTTCTTGAAGCCTGCTTTTTTATACTAAGTTGGCATTATAAAAAAGCATTGC- 3'  
 3' -AAGAAAAAAAGAACTTCGACGAAAAAATATGATTCAACCGTAATATTTTTTCGTAACG- 5'

5' -TTATCAATTTGTTGCAACGAACAGGTCACATCAGTCAAAATAAAATCATTATTTGATT- 3'  
 3' -AATAGTTAAACAACGTTGCTTGTCAGTGATAGTCAGTTTTATTTTAGTAATAAACTAA- 5'

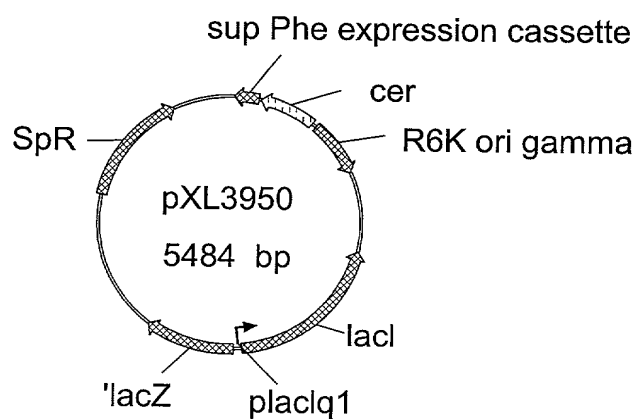


**FIG. 15**

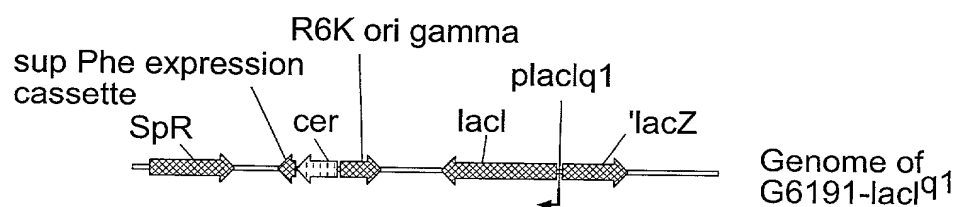


**FIG. 16**



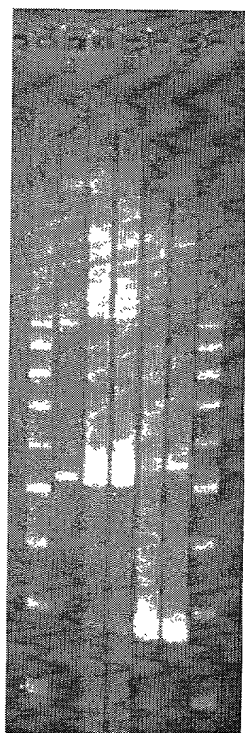


Transformation in the strain G6191  
Selection with spectinomycin



**FIG. 17**

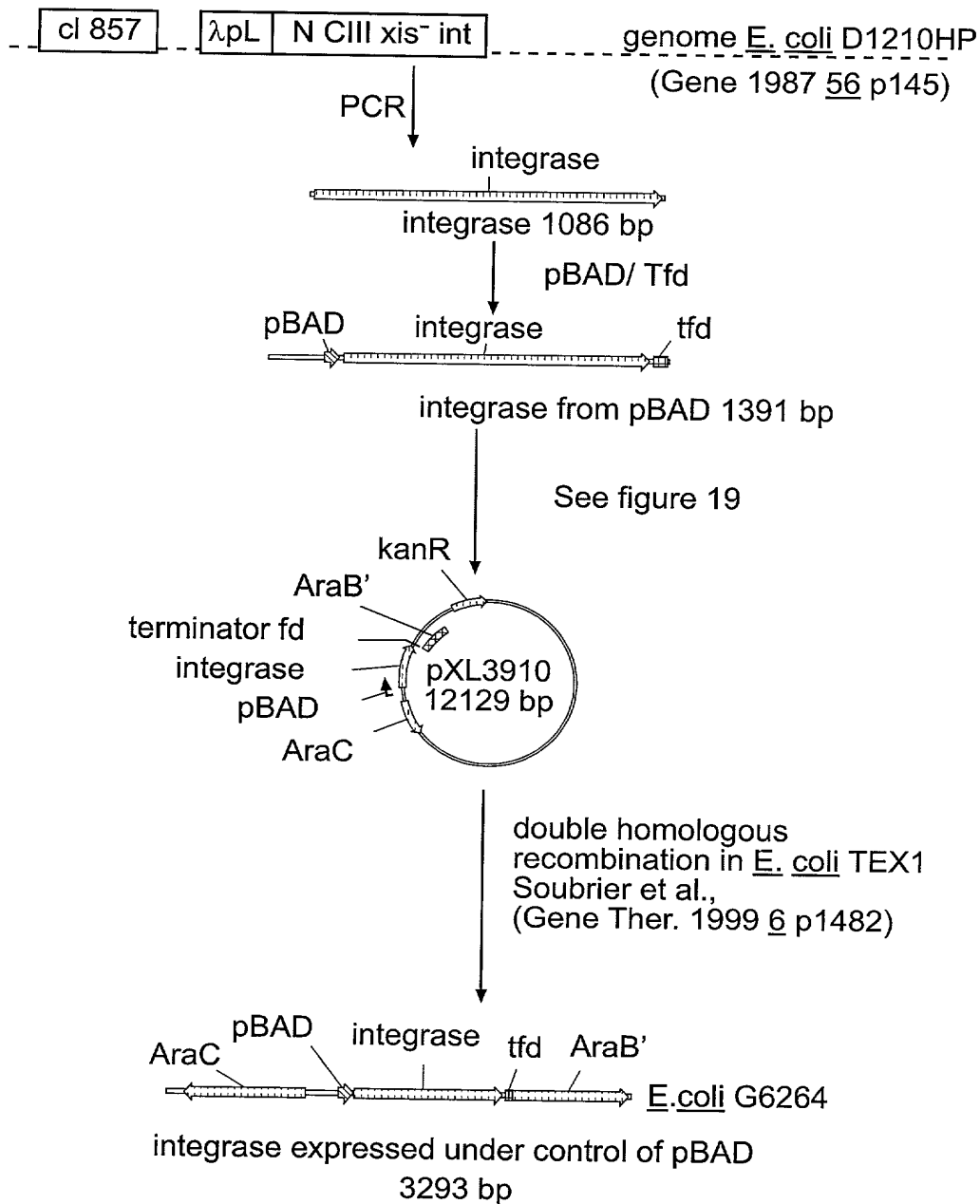
Kb 1 2 3 4 5 6 7



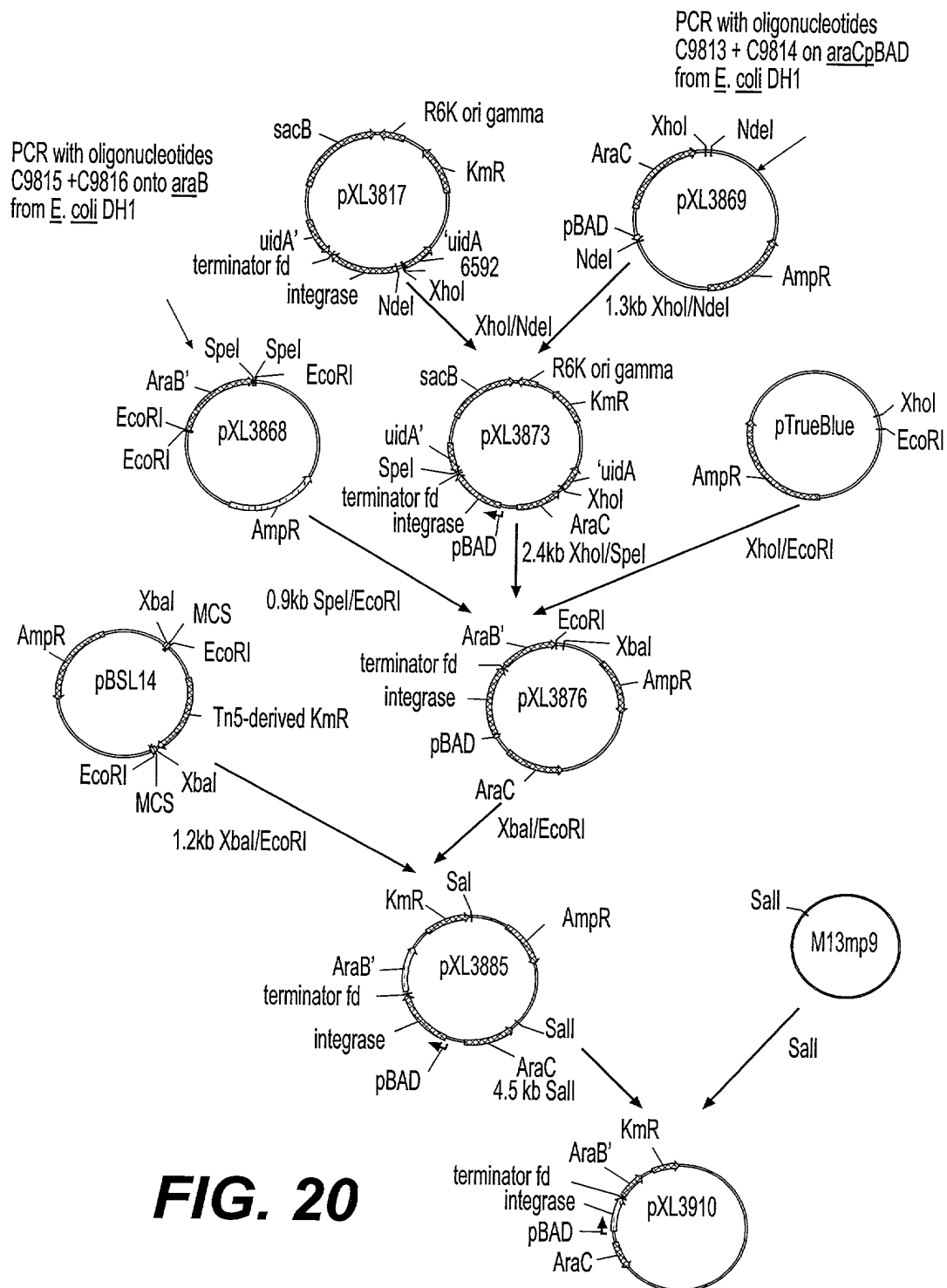
← pXL3909 non-recombined

← Miniplasmid MP3909

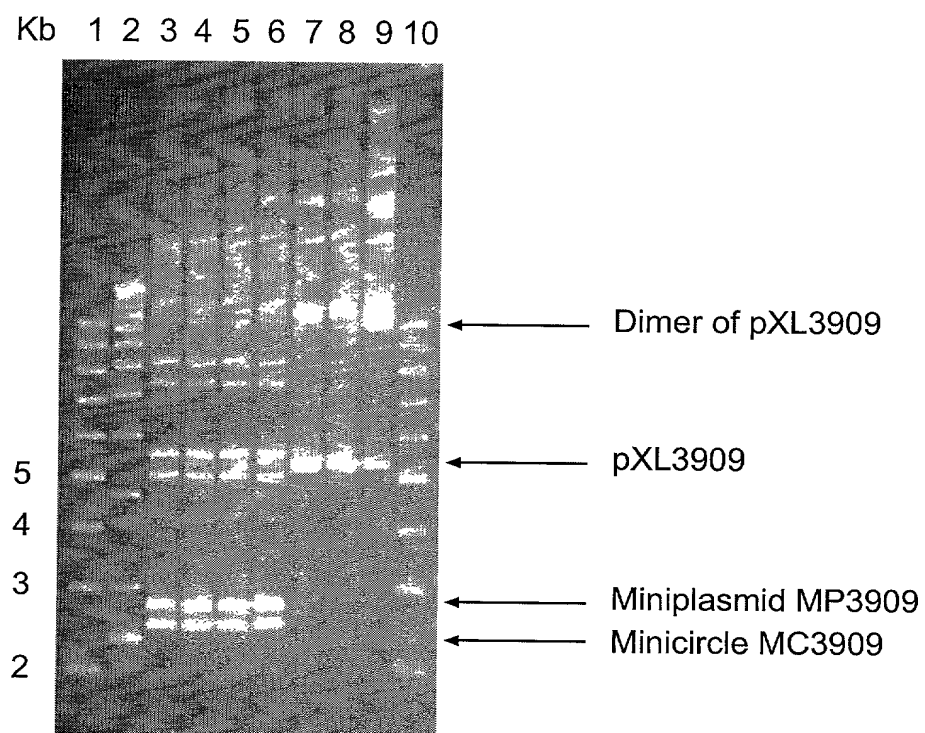
**FIG. 18**



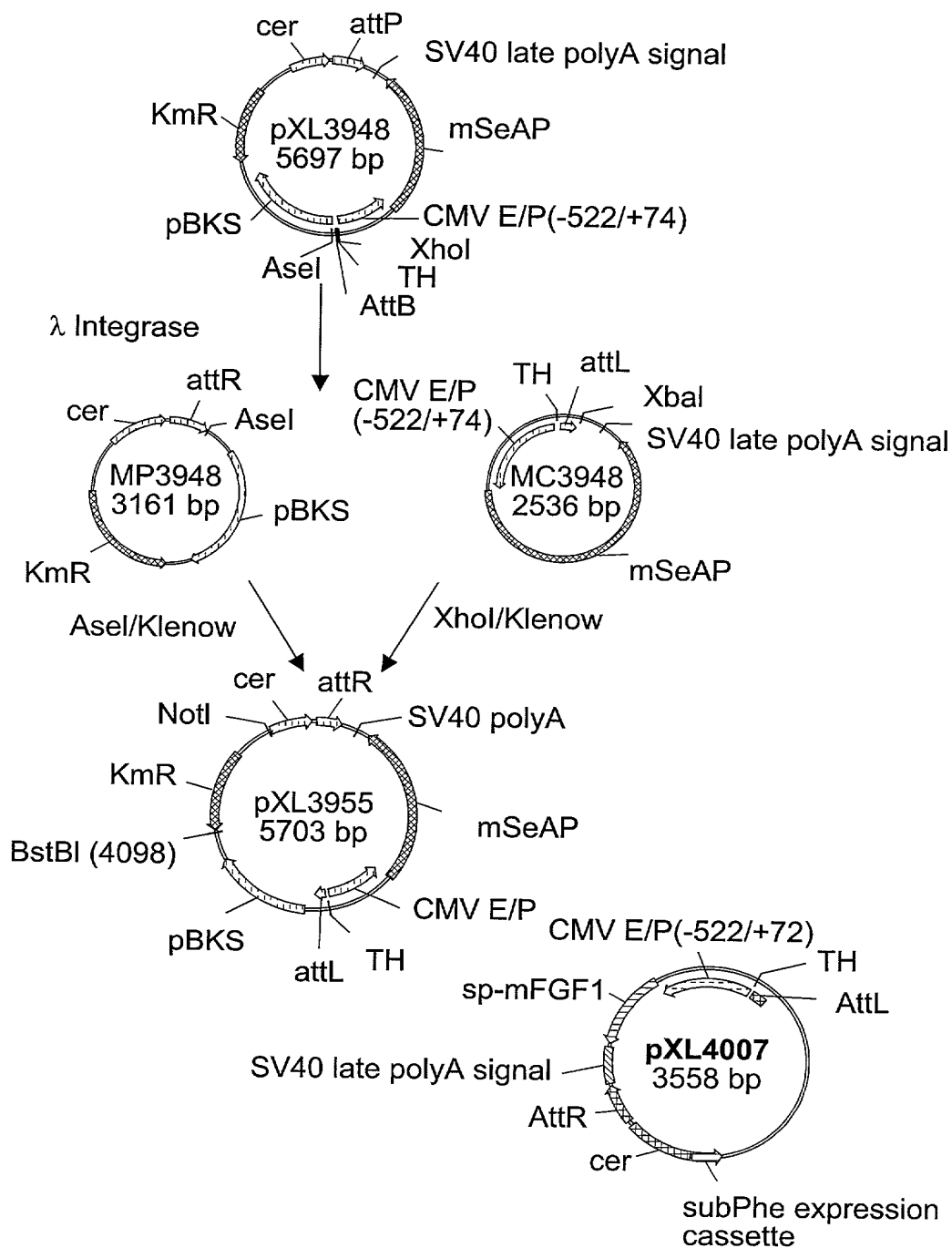
**FIG. 19**



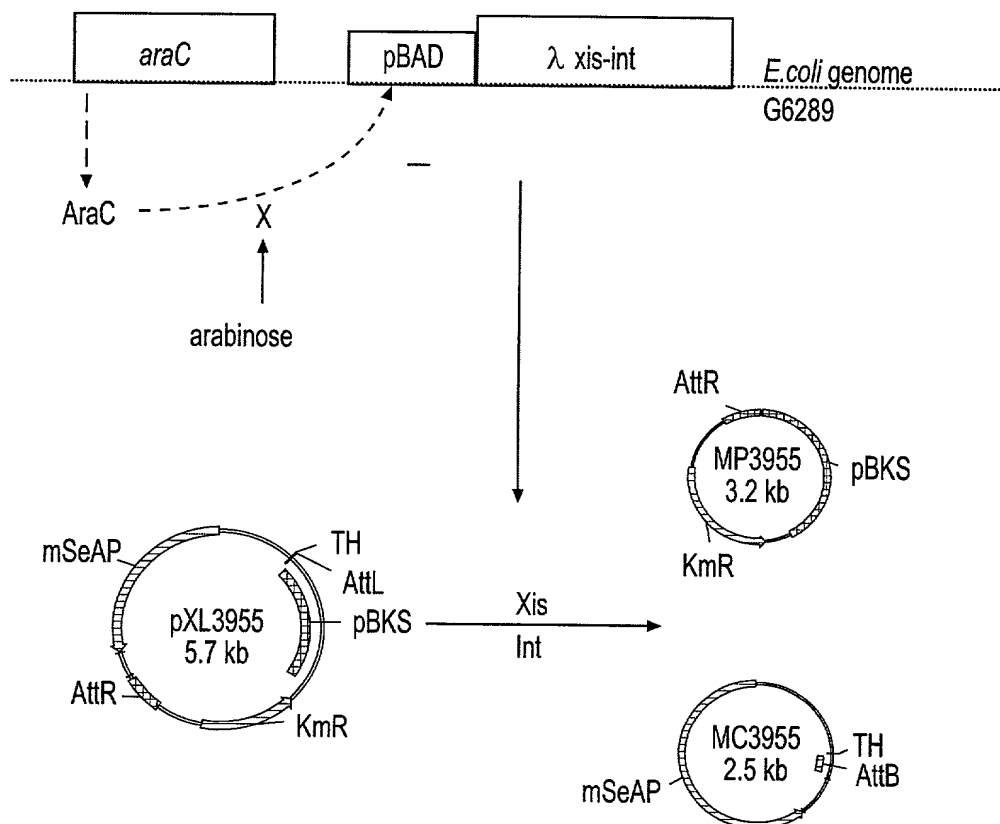
**FIG. 20**



**FIG. 21**



**FIG. 22**

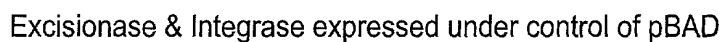
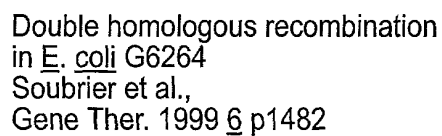


TH & attB (29bp) (SEQ ID NO:13)

5' -TTCTTTTTTTCTTGAAGCCTGCTTTTTTATACTAACTTGAGC- 3'  
 3' -AAGAAAAAAGAACTTCGGACGAAAAAATATGATTGAACTCG- 5'

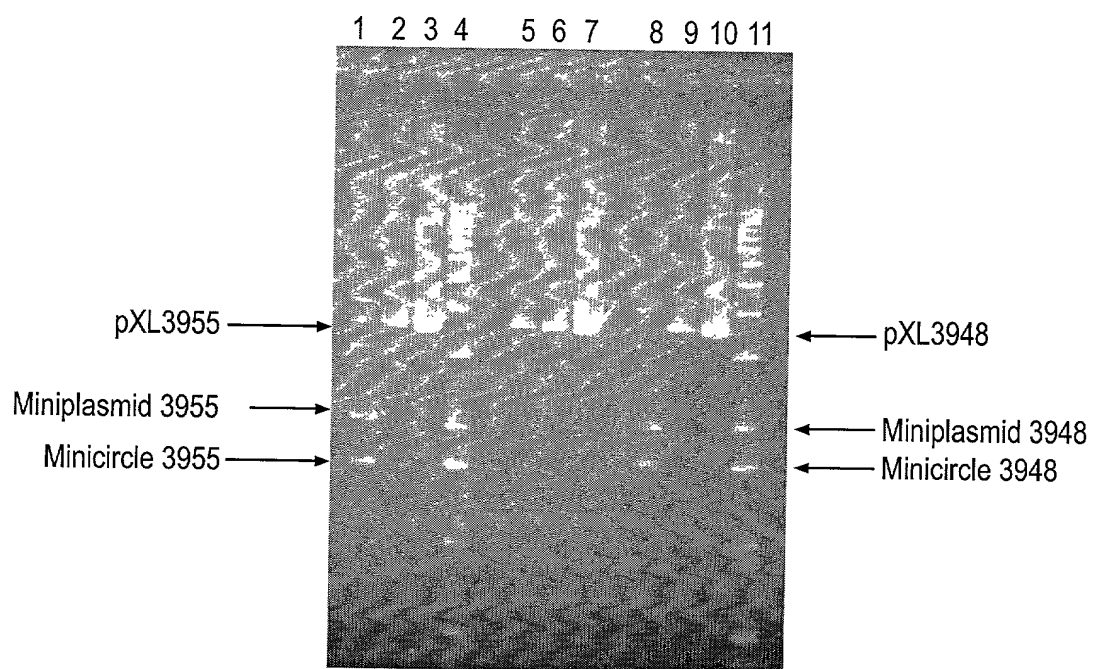
**FIG. 23**

**Figure 6.** The effect of the number of iterations on the accuracy of the proposed algorithm. The figure shows the accuracy of the proposed algorithm as a function of the number of iterations for different values of the parameters  $\alpha$  and  $\beta$ . The x-axis represents the number of iterations (from 0 to 100), and the y-axis represents the accuracy (from 0.8 to 1.0). The legend indicates four cases:  $(\alpha=0.5, \beta=0.5)$ ,  $(\alpha=0.7, \beta=0.7)$ ,  $(\alpha=0.9, \beta=0.9)$ , and  $(\alpha=1.0, \beta=1.0)$ . All curves show an increasing trend in accuracy as the number of iterations increases, with higher parameter values generally leading to faster convergence and higher final accuracy.

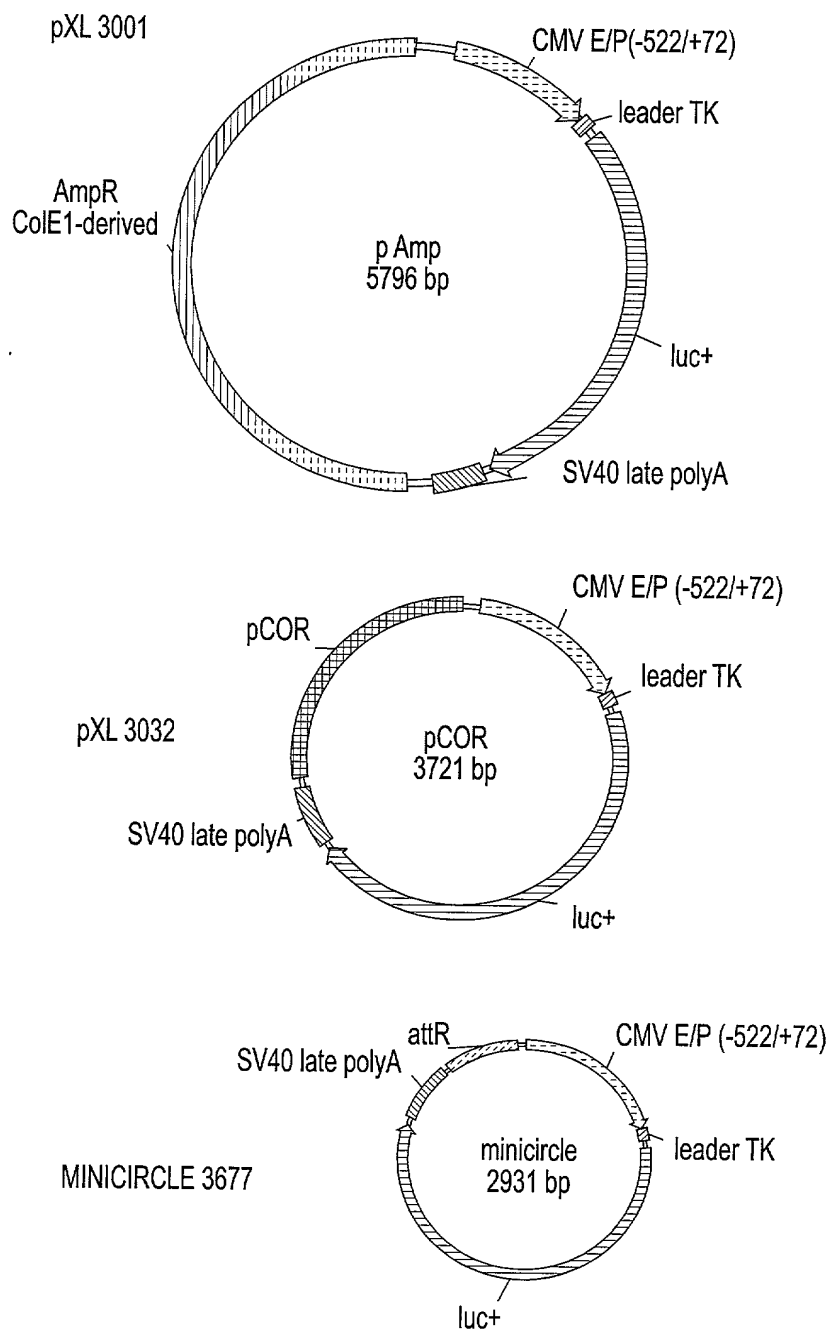


**FIG. 24**





**FIG. 25**



**FIG. 26**

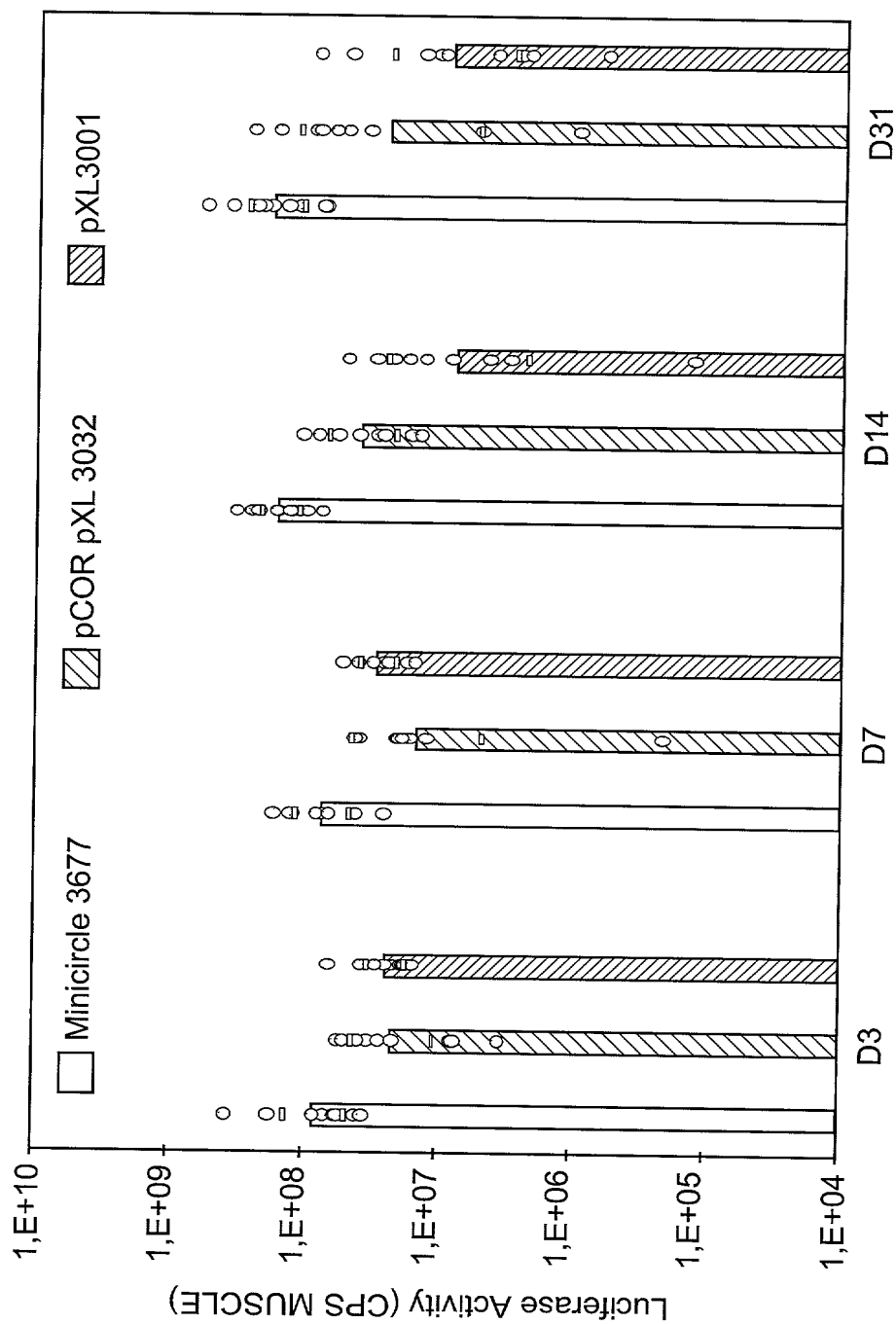


FIG. 27